

## CLAIMS

I claim:

1. A system, comprising:
  - a recipient's email gateway connected to a network and configured to receive email messages from the network; and
  - a group of email-scanning servers comprising one or more email scanning servers, each of the email-scanning servers configured with anti-virus software to scan and clean viruses, the group of email scanning servers connected to the network,
  - wherein when the recipient's email gateway receives an email message from the network, the email message is transmitted to the group of email-scanning servers to generate a clean email message using the anti-virus software, and
  - wherein the clean email message is transmitted by the group of email-scanning servers to the recipient's email gateway.
2. The system of claim 1, wherein the email message is transmitted from the recipient's email gateway to the group of email-scanning servers after the email message is verified to determine if the email message needs to be scanned and cleaned.
3. The system of claim 2, wherein the email message is verified by determining source of the email message, wherein when the source of the email message is the group of the email-scanning servers, the email message has already been scanned and cleaned.

- 1        4.        The system of claim 2, wherein the email message is verified by  
2                checking a status code in a header of the email message, wherein after  
3                the group of the email-scanning servers scan and clean the email  
4                message, the status code is updated.
  
- 1        5.        The system of claim 1, wherein the email message is transmitted from  
2                the recipient's email gateway to the group of email-scanning servers  
3                using a pre-configured IP address of the group of email-scanning  
4                servers or using a DNS server connected to the network to determine an  
5                IP address of the group of email-scanning servers.
  
- 1        6.        The system of claim 1, wherein the group of email-scanning servers  
2                includes incoming email processing logic to receive the email message  
3                to be scanned and cleaned and outgoing email processing logic to  
4                transmit the clean email message.
  
- 1        7.        The system of claim 6, wherein the group of email-scanning servers  
2                further includes subscriber verification processing logic to determine if  
3                the email message belongs to a recipient who is a subscriber to an  
4                email scanning and cleaning service performed by the group of email-  
5                scanning servers.
  
- 1        8.        The system of claim 1, wherein each email-scanning server in the group  
2                of email-scanning servers comprises one or more anti-virus software.

1 9. The system of claim 1, wherein the recipient's email gateway includes  
2 email server processing logic.

1 10. The system of claim 1, further comprising a recipient's email server  
2 coupled with the recipient's email gateway and connected to the  
3 network, wherein after the recipient's email gateway receives the clean  
4 email messages from the group of email-scanning servers, the  
5 recipient's email gateway transmits the clean email messages to the  
6 recipient's email server.

1 11. The system of claim 1, wherein the recipient's email gateway is further  
2 configured to receive the email messages from a service provider's  
3 email server.

1 12. A method, comprising:  
2 receiving incoming email messages from a network;  
3 transmitting the incoming email messages to a group of email scanning  
4 servers comprising one or more email-scanning servers, the  
5 group of scanning servers connected to the network, each  
6 of the email-scanning servers configured with one or more  
7 anti-virus software to scan and clean viruses, wherein the  
8 incoming email messages are scanned and cleaned by the  
9 group of email-scanning servers to generate clean email  
10 messages; and

11 receiving the clean email messages from the group of email scanning  
12 servers.

1 13. The method of claim 12, further comprising verifying the incoming email  
2 messages to determine if the incoming email messages need to be  
3 scanned and cleaned.

1 14. The method of claim 13, wherein verifying comprises checking a source  
2 of the incoming email messages, and wherein when the source of the  
3 incoming email messages is the group of email-scanning servers, the  
4 incoming email messages are clean.

1 15. The method of claim 13, wherein verifying comprises checking a status  
2 code in the headers of the incoming email messages, wherein the group  
3 of email-scanning servers updates the status code of the incoming email  
4 messages after the incoming email messages have been scanned and  
5 cleaned.

1 16. The method of claim 12, wherein the incoming email messages are  
2 transmitted to the group of email-scanning servers using a pre-  
3 configured Internet protocol (IP) address of the group of email-scanning  
4 servers or by using a domain name system (DNS) to determine IP  
5 address of the group of email-scanning servers.

1 17. The method of claim 12, wherein the group of email-scanning servers is  
2 further configured to determine if the incoming email messages belong  
3 to recipient subscribers whose email messages are to be scanned and  
4 cleaned.

1 18. The method of claim 12, further comprising transmitting the clean email  
2 messages to a recipient's email server connected to the network

1 19. The method of claim 12, wherein receiving the incoming email message  
2 from the network comprises receiving the incoming email message from  
3 a service provider's email server connected to the network.

1 20. A computer readable medium containing executable instructions which,  
2 when executed in a processing system, causes the processing system  
3 to perform the steps of a method comprising:  
4 receiving incoming email messages from a network;  
5 transmitting the incoming email messages to a group of email scanning  
6 servers comprising one or more email-scanning servers, the  
7 group of scanning servers connected to the network, each  
8 of the email-scanning servers configured with one or more  
9 anti-virus software to scan and clean viruses, wherein the  
10 incoming email messages are scanned and cleaned by the  
11 group of email-scanning servers to generate clean email  
12 messages; and

13 receiving the clean email messages from the group of email scanning  
14 servers.

1 21. The computer readable medium of claim 20, further comprising verifying  
2 the incoming email messages to determine if the incoming email  
3 messages need to be scanned and cleaned.

1 22. The computer readable medium of claim 21, wherein verifying  
2 comprises checking a source of the incoming email messages, and  
3 wherein when the source of the incoming email messages is the group  
4 of email-scanning servers, the incoming email messages are clean.

1 23. The computer readable medium of claim 21, wherein verifying  
2 comprises checking a status code in the headers of the incoming email  
3 messages, wherein the group of email-scanning servers updates the  
4 status code of the incoming email messages after the incoming email  
5 messages have been scanned and cleaned.

1 24. The computer readable medium of claim 20, wherein the incoming email  
2 messages are transmitted to the group of email-scanning servers using  
3 a pre-configured Internet protocol (IP) address of the group of email-  
4 scanning servers or by using a domain name system (DNS) to  
5 determine IP address of the group of email-scanning servers.

1        25.    The computer readable medium of claim 20, wherein the group of email-  
 2           scanning servers is further configured to determine if the incoming email  
 3           messages belong to recipient subscribers whose email messages are to  
 4           be scanned and cleaned.

1        26.    The computer readable medium of claim 20, further comprising  
 2           transmitting the clean email messages to a recipient's email server  
 3           connected to the network.

1        27.    The computer readable medium of claim 20, wherein receiving the  
 2           incoming email message from the network comprises receiving the  
 3           incoming email message from a service provider's email server  
 4           connected to the network.

1        28.    A system, comprising:  
 2           a service provider's email server connected to a network and configured  
 3           to receive email messages from the network;  
 4           a recipient's email gateway coupled with the service provider's email  
 5           server and connected to the network, the recipient's email  
 6           gateway configured to retrieve the email messages from the  
 7           service provider's email server at predetermined time periods;  
 8           and  
 9           a group of email-scanning servers comprising one or more email

10 scanning servers, each of the email-scanning servers includes  
 11 anti-virus software to scan and clean viruses, the group of  
 12 email-scanning servers connected to the network,  
 13 wherein when the recipient's email gateway retrieves the  
 14 email messages from the service provider's email  
 15 server, the email messages are transmitted to the  
 16 group of email-scanning servers to generate clean  
 17 email messages.

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1 29. The system of claim 28, wherein the clean email messages are  
 2 transmitted by the group of email-scanning servers to the recipient's  
 3 email gateway or to the service provider's email server.

1 30. The system of claim 28, wherein the email message is transmitted from  
 2 the recipient's email gateway to the group of email-scanning servers  
 3 after the email message is verified to determine if the email message  
 4 needs to be scanned and cleaned.

1 31. The system of claim 30, wherein the email message is verified by  
 2 checking a status code in a header of the email message, wherein after  
 3 the group of the email-scanning servers scan and clean the email  
 4 message, the status code is updated.

1 32. The system of claim 28, wherein the email message is transmitted from  
 2 the recipient's email gateway to the group of email-scanning servers



3 using a pre-configured IP address of the group of email-scanning  
4 servers or using a DNS server connected to the network to determine an  
5 IP address of the group of email-scanning servers.

1 33. The system of claim 28, wherein the group of email-scanning servers  
2 includes incoming email processing logic to receive the email message  
3 to be scanned and cleaned and outgoing email processing logic to  
4 transmit the clean email message.

1 34. The system of claim 33, wherein the group of email-scanning servers  
2 further includes subscriber verification processing logic to determine if  
3 the email message belongs to a recipient who is a subscriber to an  
4 email scanning and cleaning service performed by the group of email-  
5 scanning servers.

1 35. The system of claim 28, wherein each email-scanning server in the  
2 group of email-scanning servers comprises one or more anti-virus  
3 software.

1 36. The system of claim 28, wherein the recipient's email gateway includes  
2 email server processing logic.

1 37. The system of claim 28, further comprising a recipient's email server  
2 coupled with the recipient's email gateway and connected to the  
3 network, wherein after the recipient's email gateway receives the clean

email messages from the group of email-scanning servers, the recipient's email gateway transmits the clean email messages to the recipient's email server.

38. A method, comprising:

retrieving incoming email messages from a service provider's email server at predetermined time intervals, the service provider's email server receiving the incoming email messages from a network;

transmitting the incoming email messages to a group of email scanning servers comprising one or more email-scanning servers, the group of scanning servers connected to the network, each of the email-scanning servers includes one or more anti-virus software to scan and clean viruses, wherein the incoming email messages are scanned and cleaned by the group of email-scanning servers to generate clean email messages;

and

receiving the clean email messages from the group of email scanning servers.

39. The method of claim 38, further comprising verifying the incoming email messages to determine if the incoming email messages need to be scanned and cleaned.

40. The method of claim 39, wherein verifying comprises checking source of the incoming email messages, and wherein when the source of the incoming email messages is the group of email-scanning servers, the incoming email messages are clean.

41. The method of claim 39, wherein verifying comprises checking a status code in the headers of the incoming email messages, wherein the group of email-scanning servers updates the status code of the incoming email messages after the incoming email messages have been scanned and cleaned.

42. The method of claim 38, wherein the incoming email messages are transmitted to the group of email-scanning servers using pre-configured Internet protocol (IP) address of the group of email-scanning servers or by using a domain name system (DNS) to determine IP address of the group of email-scanning servers.

43. The method of claim 38, wherein the group of email-scanning servers is further configured to determine if the incoming email messages belong to recipient subscribers whose email messages are to be scanned and cleaned.

1 44. A system, comprising:  
2 a sender's email server connected to a network;  
3 a group of email-scanning servers comprising one or more email  
4 scanning servers, each of the email-scanning servers includes  
5 one or more anti-virus software to scan and clean viruses, the  
6 group of email-scanning servers connected to the network,  
7 the sender's email gateway transmitting the email messages  
8 to the group of email-scanning servers to scan and clean the  
9 email messages to generate clean email messages, wherein  
10 the clean email messages are stored in an email queue  
11 coupled with the group of email-scanning servers; and  
12 a recipient's email gateway connected to the network, the recipient's  
13 email gateway configured to send forward requests to the  
14 group of email-scanning servers at predetermined time  
15 intervals, wherein when the forward requests are received, the  
16 clean email messages are transmitted from the email queue to  
17 the recipient's email gateway.

1 45. The system of claim 44, wherein the recipient's email gateway uses  
2 dynamic Internet protocol (IP) addressing.

1 46. The system of claim 45, wherein the recipient's email gateway monitors  
2 its dynamic IP address and stores the dynamic IP address when it  
3 changes.

- 1      47.    The system of claim 44, wherein the recipient's email gateway sends  
2           forward requests to the group of email-scanning servers using a pre-  
3           configured IP address of the group of email-scanning servers or using  
4           an IP address provided by a data name system (DNS) connected to the  
5           network.
  
- 1      48.    The system of claim 47, wherein the forward requests are sent at  
2           predetermined time intervals.
  
- 1      49.    The system of claim 44, wherein authentication information is sent with  
2           the forward requests.
  
- 1      50.    The system of claim 44, wherein the forward request comprises a  
2           dynamic IP address of the recipient's email gateway and email address  
3           of a recipient.
  
- 1      51.    The system of claim 50, wherein the email address or Internet domain  
2           name of the recipient is used to identify the clean email messages  
3           stored in the email queue to be retrieved.
  
- 1      52.    The system of claim 44, wherein the group of email-scanning servers  
2           includes incoming email processing logic to receive the email message  
3           from the sender's email server and outgoing email processing logic to  
4           transmit the clean email message to the recipient's email gateway.

1 53. The system of claim 44, wherein the group of email-scanning servers  
 2 further includes subscriber verification processing logic to determine if  
 3 the email message belongs to a recipient whose email messages are to  
 4 be scanned and cleaned.

1 54. A method, comprising:  
 2 sending email messages from a sender's email server to a group of  
 3 email-scanning servers using a network, the group of email  
 4 scanning servers comprising one or more email scanning  
 5 servers having one or more anti-virus software to scan and  
 6 clean viruses;  
 7 scanning and cleaning the email messages to generate clean email  
 8 messages;  
 9 storing the clean email messages in an email queue; and  
 10 responsive to receiving forward requests from a recipient's email  
 11 gateway, transmitting the clean email messages from the  
 12 email queue to a recipient's email gateway.

1 55. The method of claim 54, wherein the forward requests comprises a  
 2 dynamic Internet protocol (IP) address of the recipient's email gateway.

1 56. The method of claim 55, wherein the forward requests further comprises  
 2 an email address or Internet domain name of a recipient.

1 57. The method of claim 56, wherein the email address or Internet domain  
2 name of the recipient is used to determine the clean email messages  
3 stored in the email queue to be transmitted to the recipient's email  
4 gateway.

1 58. The method of claim 54, wherein the forward requests are sent at  
2 predetermined time interval.